

# Metadata

## OMPS Metadata Discussion of Science Team Requirements

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# Current Situation

- OMPS data to be archived long term in GSFC DISC (Formerly DAAC)
- LP data to be archived from reprocessing V3.0 onwards
- NP/NM(TC) data to be archived from reprocessing V3.0 onwards
- IE. Current re-processings are not relevant for archival storage
- Need to begin preparing now for archival of future reprocessing(s)

# Requirements - Overview

- Processing Requirements (ACPS)
  - Filenames are 1<sup>st</sup> cut of metadata
- DISC (DAAC) Storage Requirements
  - Must sync with DISC archive requirements
- Science Team Requirements
- Recommended additions -  
useful but not absolutely necessary
- Possible additions –  
parallel to other metadata, etc.

# Science Team

- Science Team decides WHAT data is archived
  - Single most fundamental decision
- What do we actually want to archive ?
  - What data is needed for long term research ?
  - What data will be needed in 5/10/20+ years ?
  - Err on the side of more rather than less
- Storage space is available
- Measure in terms of HDF5 data files

# What Files for Archival – L0/L1 ?

- L0 – Do we archive at all ?
  - Defer until later
- L1 – Most choice
  - L1A – Do we archive at all ?
  - L1B – which ?
  - **L1G – Best candidate for archival**
  - L1ANC – Ancillary data - Do we archive ?
  - L1CAL – Calibration data – Do we archive ?

# What Files for Archival - L2/L3 ?

- L2 -
  - Orbital – Definitely archive
  - Daily – Do we archive ?
- L3 – One file only currently
  - NMTO3-L3-DAILY
  - What do we expect in future

# Key Question

In 20 years time (2035!)  
what files will I need  
to do my research ?

# Spreadsheet of relevant files

File Edit View Insert Format Tools Data Window Help															
Arial 8															
M43 Tong Zhu															
1	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
2															
3	Shortname	Description	Product Level	File Format	# files per day	Approx File Size	Daily volume	Monthly Volume	Temporal Coverage		Granularity	Sensor	Contact person	Include DISC	Include LANCE
4															
5															
6	Level 1 – Radiance														
7															
8	LPEV-L1A	Earthview data : Counts	L1A	HDF5	16	35 MB	560 MB	17 GB	90 mins		Orbit	LP	Mike Linda	Y	N
9	NMEV-L1A	Earthview data : Counts	L1A	HDF5	16	50 MB	800 MB	24 GB	90 mins		Orbit	NM (formerly TC)	Mike Linda	Y	N
10	NPEV-L1A	Earthview data : Counts	L1A	HDF5	16	3 MB	50 MB	1.5 GB	90 mins		Orbit	NP	Mike Linda	Y	N
11															
12	LPCAL-L1A	Calibration data : Counts	L1A	HDF5	16	20 MB	320 MB	9.6 GB	90 mins		Orbit	LP	Mike Linda	Y	N
13	NMCAL-L1A	Calibration data : Counts	L1A	HDF5	16	20 MB	320 MB	9.6 GB	90 mins		Orbit	NM (formerly TC)	Mike Linda	Y	N
14	NPCAL-L1A	Calibration data : Counts	L1A	HDF5	16	5 MB	80 MB	2.4 GB	90 mins		Orbit	NP	Mike Linda	Y	N
15															
16	LPEV-L1B	Earthview data : Radiance : geolocated & calibrated	L1B	HDF5	16	750 MB	12 GB	360 GB	90 mins		Orbit	LP	Jeremy Warner	Y	N
17	NMEV-L1B	Earthview data : Radiance : geolocated & calibrated	L1B	HDF5	16	1 GB	16 GB	480 GB	90 mins		Orbit	NM (formerly TC)	Jeremy Warner	Y	N
18	NPEV-L1B	Earthview data : Radiance : geolocated & calibrated	L1B	HDF5	16	500 KB	8 MB	240 MB	90 mins		Orbit	NP	Jeremy Warner	Y	N
19															
20	LPCAL-L1B	Calibration data : Radiance : geolocated & calibrated	L1B	HDF5	16	20 MB	320 MB	9.6 GB	90 mins		Orbit	LP	Jeremy Warner	Y	N
21	NMCAL-L1B	Calibration data : Radiance : geolocated & calibrated	L1B	HDF5	16	25 MB	400 MB	12 GB	90 mins		Orbit	NM (formerly TC)	Jeremy Warner	Y	N
22	NPCAL-L1B	Calibration data : Radiance : geolocated & calibrated	L1B	HDF5	16	10 MB	160 MB	5 GB	90 mins		Orbit	NP	Jeremy Warner	Y	N
23															
24	LP-L1G-EV	Earthview data : Radiance : Gridded : height/wavelength	L1G	HDF5	16	250 MB	4 GB	120 GB	90 mins		Orbit	LP	Dan Kahn	Y	N
25															
26	LP-L1-ANC	Ancillary data : a priori etc.	L1ANC	HDF5	16	1MB	16 MB	480 GB	90 mins		Orbit	LP	Philippe Xu	Y	N
27	NM-L1-ANC	Ancillary data : a priori etc.	L1ANC	HDF5	16	8 MB	128 MB	4 GB	90 mins		Orbit	NM (formerly TC)	Jason Li	Y	N
28	NP-L1-ANC	Ancillary data : a priori etc.	L1ANC	HDF5	16	80 KB	1.3 MB	40 MB	90 mins		Orbit	NP	Jason Li	Y	N
29															
30															
31	Level 2 – Ozone														
32															
33	LP-L2-O3-DAILY	Ozone data	L2	HDF5	1	30 MB	30 MB	1 GB	24 hours		Daily	LP	Tong Zhu	Y	N
34	LP-L2-O3	Ozone data	L2	HDF5	16	15 MB	240 MB	7.2 GB	90 mins		Orbit	LP	Tong Zhu	Y	N
35	NMT-O3-L2	Ozone data	L2	HDF5	16	120 MB	2 GB	60 GB	90 mins		Orbit	NM (formerly TC)	Jason Li	Y	N
36	NMT-O3-L2G	Ozone data	L2	HDF5	16	40 MB	640 MB	20 GB	90 mins		Orbit	NM (formerly TC)	Jason Li	Y	N
37	NPBUVO3-L2	Ozone data	L2	HDF5	16	500 KB	8 MB	240 MB	90 mins		Orbit	NP	Jason Li	Y	N
38	NPBUVO3-L2-DAILY	Ozone data	L2	HDF5	1	5 MB	5 MB	150 MB	24 hours		Daily	NP	Jason Li	Y	N
39															
40	Level 2 – Aerosol														
41															
42	LP-L2-AER-DAILY	Aerosol data	L2	HDF5	1	5 MB	5 MB	150 MB	24 hours		Daily	LP	Tong Zhu	Y	N
43	LP-L2-AER	Aerosol data	L2	HDF5	16	15 MB	240 MB	7.2 GB	90 mins		Orbit	LP	Tong Zhu	Y	N
44	NMUVAI-L2	Aerosol data	L2	HDF5	16	?	?	?	90 mins		Orbit	NM (formerly TC)	Colin Seftor	Y	N
45	NMUVAI-L2-NRT	Aerosol data	L2	HDF5	16	?	?	?	90 mins		Orbit	NM (formerly TC)	Colin Seftor	N	Y
Sheet 1 / 3 PageStyle_Sheet1 STD * Sum=0 Average=															



# File Level Metadata

- Need to decide file types first
- ACPS and DISC (DAAC) decided for us
- What are the science team requirements ?
- Everything held in HDF5 files :
  - Data objects/Attributes – currently in use
  - User Block(s) – some issues
- Simple Python calls
  - Other languages ?
  - Can write post-processor App

Recent Files /user/1001/scratchdev/pfhall/metadata/OMPS-NPP\_LP-L1G-EV\_v1.8\_2014m1201t100907\_o16033\_2014m1201t113251.h5

Clear Text

OMPS-NPP\_LP-L1G-EV\_v1.8\_2014m

- DigitalObjectIdentifier
- GEOLOCATION\_DATA
- GRIDDED\_DATA
- GRIDDED\_DATA\_SUPPLEMENTAL
- InputPointers
- METADATA1
- METADATA2
  - metadata2
- Info

TableView - metadata2 - /METADATA2/ - /user/1001/scratchdev/...

	Metadata name	Metadata
0	title	OMPS Level-1G
1	platform	Suomi NPP
2	project	NASA S-NPP
3	product_name	Example OMPS L1G
4	instrument	OMPS/LP
5	Conventions	CF-1.6
6	institution	NASA Goddard Space Flight Center
7	license	http://science.nasa.gov/earth-science/earth-
8	naming_authority	TDB
9	keywords_vocabulary	NASA Global Change Master Directory (GCMD
10	stdname_vocabulary	NetCDF Climate and Forecast (CF), Metadata
11	creator_name	NASA/GSFC
12	creator_email	data@somewhere.gsfc.nasa.gov
13	creator_url	http://somewhere.gsfc.nasa.gov
14	date_created	ISO format date
15	publisher_name	NASA/GSFC
16	publisher_email	data@somewhere.gsfc.nasa.gov
17	publisher_url	http://somewhere.gsfc.nasa.gov
18	cdm_data_type	swath
19	processingLevel	Level-1G
20	references	

Properties - /METADATA1 &lt;@ompspeate2.gsfc.nasa.gov&gt;

General Attributes

Number of attributes = 44

Add

Delete

Name	Value	Type	Array Size
Conventions	CF-1.6	String, length = 6	Scalar
cdm_data_type	swath	String, length = 5	Scalar
creator_email	data@somewhere.gs...	String, length = 28	Scalar
creator_name	NASA/GSFC	String, length = 9	Scalar
creator_url	http://somewhere.g...	String, length = 30	Scalar
date_created	ISO format date	String, length = 15	Scalar
day_night_flag	Day	String, length = 3	Scalar
eastBoundLongitude	0.0	64-bit floating-point	Scalar
endDirection	Ascending	String, length = 9	Scalar
equatorCrossingDat...	ISO DATE TIME	String, length = 13	Scalar
equatorCrossingLon...	0.0	64-bit floating-point	Scalar
geospatial_lat_max	0.0	64-bit floating-point	Scalar
geospatial_lat_min	0.0	64-bit floating-point	Scalar
geospatial_lat_unit	Degrees XXX	String, length = 11	Scalar
geospatial_lon_max	0.0	64-bit floating-point	Scalar
geospatial_lon_min	0.0	64-bit floating-point	Scalar
geospatial_lon_unit	Degrees XXX	String, length = 11	Scalar
gring_point_latitude	0.0	64-bit floating-point	Scalar
gring_point_longitude	0.0	64-bit floating-point	Scalar
gring_point_sequence	0	32-bit integer	Scalar
history		String, length = 1	Scalar
institution	NASA Goddard Spac...	String, length = 32	Scalar
instrument	OMPS/LP	String, length = 7	Scalar
keywords_vocabulary	NASA Global Change...	String, length = 59	Scalar
license	http://science.nasa....	String, length = 81	Scalar
naming_authority	TDB	String, length = 3	Scalar

Close

METADATA1 (244217146, 2)

Group size = 0

Number of attributes = 44

Log Info

Metadata

# Science Metadata Inclusion

- Instrument
- Calibration
- Science Data
- Tables
  - Whole table ?
  - Reference to table ?

# Metadata Checkers

- Currently available tools
- EOSDIS
- CF – NETCDF
- AppCheck – in house customizable
- ISO Standards